

Title (en)
METHOD TO OBTAIN MALE-STERILE PLANTS

Title (de)
VERFAHREN ZUR HERSTELLUNG VON MÄNNLICH STERILEN PFLANZEN

Title (fr)
PROCEDE D'OBTENTION DE PLANTES MALES STERILES

Publication
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Application
EP 96905774 A 19960221

Priority
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• EP 9600722 W 19960221
• EP 95400364 A 19950221

Abstract (en)
[origin: WO9626283A1] A method to obtain male-sterile plants by transforming the nuclear genome of plant cells with a foreign DNA comprising a male-sterility gene comprising: a male-sterility DNA encoding a sterility RNA, protein or polypeptide, preferably barnase, which, when produced or overproduced in a stamen cell of the plant, significantly disturbs the metabolism, functioning and/or development of the stamen cell; and, a sterility promoter capable of directing expression of the male-sterility DNA selectively in specific stamen cells, especially in anther cells, particularly in tapetum cells, of said plant, the male-sterility DNA being in the same transcriptional unit as, and under the control of, the sterility promoter; and regenerating plants transformed with said foreign DNA from said transformed cells, which method is characterized by including in said foreign DNA a coregulating gene comprising a coregulating DNA encoding a coregulating RNA, protein or polypeptide, preferably barstar, which is capable, when produced in plant cells wherein said sterility RNA, protein or polypeptide is produced, of sufficiently preventing the activity of said sterility RNA, protein or polypeptide, said coregulating DNA preferably being under the control of a promoter selected from the group consisting of: a promoter capable of directing expression of said coregulating DNA in non-stamen cells, preferably at least in the majority of non-stamen cells, while directing low-level expression, preferably not directing expression, in said specific stamen cells; a promoter consisting of a minimal promoter element, preferably of a promoter normally expressed in plant cells, particularly whereby said coregulating DNA is capable of being placed under control of enhancer elements in the nuclear genome of said plant after integration of said foreign DNA in said plant genome, whereby said coregulating DNA is in a different plant transcriptional unit as said sterility DNA, and provided that, when said coregulating DNA is not under control of a promoter capable of directing expression in plant cells, said coregulating gene is located in said foreign DNA in such a way that after insertion in the plant genome, the coregulating DNA is capable of being placed under the control of plant promoter sequences present in the DNA surrounding said foreign DNA in said plant genome.

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